SLOVENSKI STANDARD
SIST EN 15328:2020/oprA1:2022

01-februar-2022

Železniške naprave - Zavore - Zavorne obloge - Dopolnilo A1

Railway applications - Braking - Brake pads

Bahnanwendungen - Bremsen - Bremsbeläge

Applications ferroviaires - Freinage - Garniture de frein

Ta slovenski standard je istoveten z: **EN 15328:2020/prA1**

ICS:

45.040	Materiali in deli za železniško tehniko	Materials and components for railway engineering

SIST EN 15328:2020/oprA1:2022 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 45.040

English Version

Railway applications - Braking - Brake pads

Applications ferroviaires - Freinage - Garniture de frein

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This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

This draft amendment A1, if approved, will modify the European Standard EN 15328:2020. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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Contents

European foreword

This document (EN 15328:2020/prA1:2021) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

1 Modifications to the Introduction

In the second paragraph delete the second sentence and change it to:

“The generic test program can also be used with different program parameter figures for specific project applications.”

Delete the last paragraph.

2 Modifications to 3 “Terms and definitions”

Add a new term 3.7:

“**3.7**
continuous brake application 1
brake application which represents the Gotthard-Ramp with friction brakes only”

Add a new term 3.8:

“**3.8**
continuous brake application 2
brake application which represents the reference case of TSI Loc&Pas to perform a continuous brake application in load condition ‘maximum braking load’ at speed equal to 90 % of the maximum operating speed on maximum descending gradient of 35 ‰ during 6 km with friction brakes and a train resistance (25 % of the total brake force)”

3 Modification to 5.6.6 “Coefficient of friction under wet conditions”

In the first sentence add an “s” to “test program”:

“In wet conditions, with the highest nominal application force of test programs S2.1 and T2 the mean coefficient of friction shall not vary – all other things being equal – by more than ± 15 % compared with the average of mean coefficients of friction obtained during braking under dry conditions.”

4 Modifications to 5.14 “Interchangeability of brake pads”

Replace the current subclause by the following:

“The ability to obtain interchangeability of brake pads for the application in the same train can be evaluated via dynamometer testing. The tests shall be conducted at the same dynamometer either with one of the predefined test programs contained within this standard or with a test program adapted from the appropriate generic test program (Annex E) to the parameters of the train at hand. The brake disc to be used for the tests shall be of the same type that is used on the train for which brake pad interchangeability is sought.

Both brake pads shall be compliant with this standard on the basis of testing carried out defined above.

For existing fleets, one of the two brake pads shall already be used in the train and in the evaluation of the train’s brake performance in the homologation process.

The difference in the values of the mean coefficients of friction of both brake pads under dry conditions at train speeds critical for brake performance evaluation shall be compliant with the criteria defined in a technical specification (e.g. do not exceed 10 % upwards or 5 % downwards of the reference value of the coefficient of friction).

At other speeds, the brake performance of both brake pads shall be greater or equal to the brake performance evaluated at the critical speed.”

5 Modification to Table B.1

For "No. brake" 112 change the last column from

"Continuous brake application with 45 kW for 34 min"

to

"Continuous brake application with 46 kW for 34 min"

6 Modifications to Table B.2

For "No. brake" 137 change the fourth column from

"70"

to

"80"

and the last column from

"Continuous brake application with 57 kW for 12 min"

to

"Continuous brake application 1 with 37 kW for 30 min"

For "No. brake" 138 change the fourth column from

"70"

to

"80"

7 Modifications to Table B.3

For "No. brake" 137 change the fourth column from

"70"

to

"80"

and the last column from

"Continuous brake application with 72 kW for 12 min"

to

"Continuous brake application 1 with 46 kW for 30 min"

For "No. brake" 138 change the fourth column from

"70"

to

"80"

8 Modification to Table B.4

For "No. of brake app." 97 change the last column from

"Continuous brake application with a dissipated load of 55 kW over 10 min"

to

"Continuous brake application 1 with a dissipated load of 31 kW over 30 min"

9 Modifications to Table B.5

For "No. brake" 63 change the third column from

"70"

to

"80"

and the last column from

"Continuous brake application with 45 kW for 34 min"

to

"Continuous brake application 1 with 52 kW for 30 min"

For "No. brake" 64 change the third column from

"70"

to

"80"

10 Modifications to Table B.6

For "No. brake" 101 change the third column from

"70"

to

"80"

and the last column from

"Continuous brake application with 47 kW for 12 min"

to

"Continuous brake application 1 with 30 kW for 30 min"

For "No. brake" 102 change the third column from

"70"

to

"80"

Replace the last six rows by the following eight rows:

“

1	121	160	37	50–60	6,5	Dry brake application
—	122	225	—	50–60	—	Continuous brake application 2 with 105 kW for 96 s
3	123	225	25/37	—	6,5	Brake application to a stand dry without cooling interval W.
4	124–133	120	24	50–60	6,5	Regeneration of brake pads
—	134	70	—	—	—	Drag braking, 20 kW, until T > 120 °C
—	135–139	0	57	100	—	Parking brake, hot
—	140–144	0	57	40	—	Parking brake, cold
W. weighing. A minimum initial temperature (θ_0) of 20 °C is permissible after weighing.						

“

11 Modifications to Table B.7

For “No. brake” 109 change the third column from

“70”

to

“80”

and the last column from

“Continuous brake application with 72 kW for 12 min”

to

“Continuous brake application 1 with 46 kW for 30 min”

For *“No. brake” 110 change the third column from*

“70”

to

“80”

Replace the last five rows by the following eight rows:

“

1	129	160	55	50–60	10	Dry brake application
—	130	225	—	—	—	Continuous brake application 2 with 162 kW for 96 s
3	131	225	37/55	—	10	Brake application to a stand dry without cooling interval W.
4	132-141	120	36	50-60	10	Regeneration of brake pads
—	142	70	—	—	—	Drag braking, 20 kW, until T > 120 °C
—	143–147	0	57	100	—	Parking brake, hot
	148-152	0	57	40	—	Parking brake, cold
W. weighing. A minimum initial temperature (θ_0) of 20 °C is permissible after weighing.						

“

12 Modifications to Table B.8

For “No. brake” 71 change the last column from:

“Continuous brake application with 40 kW for 20 min”

to

“Continuous brake application 1 with 37 kW for 30 min”

For “No. brake” 105 change the third column from

“80”

to

“270”

and the last column from

“Continuous brake application 58 kW for 20 min”

to

“Continuous brake application 2 with 156 kW for 80 s”

For No. brake” 106 change the third column from

“80”

to

“270”